Abstracts

Dielectric Loss in Biogenic Steroids at Microwave Frequencies

R. Aruna and J. Behari. "Dielectric Loss in Biogenic Steroids at Microwave Frequencies." 1981 Transactions on Microwave Theory and Techniques 29.11 (Nov. 1981 [T-MTT]): 1209-1213.

Dielectric loss in steroids has been measured in solid format 9.4 GHz and in nonaqueous solutions at 3.3 and 9.4 GHz. The method for solutions consists of measurement on standing-wave pattern in front of a column of liquid of varying length and concentration, contained in a short-circuited dielectric cell. Keeping the concentration within the limits of dilute solutions, dipole moment and relaxation time of Cholesterol, Progesterone, and Testosterone have been evaluated. Mechanisms responsible for dielectric loss and its trend of variation in the three steroids are presented. The solid phase measurements were carried out by cavity perturbation technique on powders and crystal values, for epsilon' and epsilon" were evaluated. The difference in epsilon" values of the three steroids in the two phases is attributed to the difference in the mechanism of microwave absorption. However, identical values of epsilon' are obtained.

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